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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/621,129

07/16/2003

Yuriy Gmirya

67,008-070;S-5668

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EXAMINER

LE, DAVID D

ART UNIT

PAPER NUMBER

3655

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/621,129	<b>Applicant(s)</b> GMIRYA, YURIY	
	<b>Examiner</b> DAVID D. LE	<b>Art Unit</b> 3655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-19,21-24 and 28-45 is/are pending in the application.
- 4a) Of the above claim(s) 28-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-19, 21-24 and 38-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

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### **DETAILED ACTION**

1. This is the eighth Office action on the merits of Application No. 10/621,129, filed on 16 July 2003. Claims 1, 3-19, 21-24, and 28-45 are pending. Of those pending claims, claims 28-37 are withdrawn from consideration as being directed to a non-elected species.

### **Documents**

2. The following documents have been received and filed as part of the patent application:

- Information Disclosure Statement, received on 7/16/03
- Information Disclosure Statement, received on 08/24/05
- Replacement Drawings, received on 06/06/06
- Replacement Drawings, received on 11/17/06

### ***Continued Examination Under 37 CFR 1.114***

3. A request for continued examination under 37 CFR 1.114 was filed in this application after a decision by the Board of Patent Appeals and Interferences, but before the filing of a Notice of Appeal to the Court of Appeals for the Federal Circuit or the commencement of a civil action. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 09 February 2010 has been entered.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1, 3, 4, 12, 16-19, 21-24, 38 and 41-44 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent No. 4,489,625 to White.**

*Claims 1, 3, 4, 12, 16-19, 21-24, 38 and 41-44:*

**White** (i.e., Figs. 5, 7 and 8; column 4, line 8 – column 12, line 12) discloses a split-torque transmission comprising:

- A main rotor shaft (i.e., Fig. 7, element 101);
- An output gear (i.e., Fig. 7, element 100);
- A first engine (i.e., Fig. 7, element 102);
- A second engine (i.e., Fig. 7, element 103);
- An input shaft (i.e., Fig. 7, element 106) driven by one of the first and second engines;
- A face gear (i.e., Fig. 7, element 115) driven by the input shaft about a face gear axis of rotation (see Fig. 7);
- A first spur gear (i.e., Fig. 7, element 117, and column 5, lines 15-18) mounted for rotation about a first spur gear axis of rotation (see Fig. 8);
- A first drive gear (i.e., Fig. 7, element 108) driven by the first spur gear;

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- A second spur gear (i.e., Fig. 7, element 117, and column 5, lines 15-18) mounted for rotation about a second spur gear axis of rotation (see Fig. 8);
- A second drive gear (i.e., Fig. 7, element 108) driven by the second spur gear;
- A floating pinion gear (i.e., Fig. 7, element 116) driven by a radially unsupported pinion shaft mounted to the face gear, the floating pinion gear meshed with the first spur gear and the second spur gear, and the floating pinion gear mounted for rotation about a floating pinion axis of rotation which provides a resilient characteristic (i.e., Fig. 7; column 11, lines 26-43);
- Wherein the floating pinion gear is meshed with the first spur gear and the second spur gear (i.e., Fig. 7);
- Wherein the floating pinion axis of rotation, the first spur gear axis of rotation, and the second spur gear axis of rotation are located along a common line (i.e., column 11, lines 26-32);
- Wherein the floating pinion axis of rotation is displaceable off said common line to split a load between the first spur gear and the second spur gear (i.e., column 11, lines 32-37);
- Wherein the radially unsupported pinion shaft is driven through a gear mesh (i.e., Fig. 7, being the meshing of the spiral bevel gear teeth arrangement of gear elements 114 and 115) generally transverse to the floating pinion axis of rotation (i.e., Fig. 7);
- Wherein the floating pinion gear is mounted to the radially unsupported pinion shaft in a cantilever manner (i.e., Fig. 7 or Fig. 5);

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- Wherein the floating pinion gear is mounted to a distal end of the radially unsupported pinion shaft (i.e., Fig. 7 or Fig. 5);
- Wherein a displacement envelope within which the floating pinion gear axis of rotation may be displaced is non-linear (i.e., column 11, lines 26-37);
- Wherein the displacement envelope within which the floating pinion gear axis of rotation may be displaced is inherently transverse to the floating pinion gear axis of rotation;
- Wherein the displacement envelope, within which the floating pinion gear axis of rotation may be displaced to split the load between the first spur gear and the second spur gear, generally includes diamond shape;
- Wherein the floating pinion axis of rotation, the first spur gear axis of rotation, and the second spur gear axis of rotation are generally parallel (i.e. Fig. 7 and column 11, lines 26-37);
- Wherein the floating pinion axis of rotation, the first spur gear axis of rotation, and the second spur gear axis of rotation are generally parallel to a main rotor axis of rotation defined by the main rotor shaft (i.e. Fig. 7 and column 11, lines 26-37);
- Wherein a first spur gear periphery of the first spur gear and a second spur gear periphery of the second spur gear at least partially overlaps an output gear periphery of the output gear adjacent a first side of the output gear, and a face gear periphery of the face gear at least partially overlaps the output gear periphery adjacent a second side of the output gear (i.e., Figs. 7 and 8).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 5-11, 13-15, 39, 40 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over White in view of U. S. Patent No. 5,813,292 to Kish et al.**

*Claims 5-11, 13-15, 39, 40 and 45:*

***White*** discloses the limitations as set forth in paragraph 7 above. Regarding claims 5-11, 13-15, 39, 40 and 45, White lacks:

- A first double helical gear driven by the first spur gear;
- A second double helical gear driven by the second spur gear; and
- Wherein the first double helical gear is of a smaller diameter than the first spur gear and the second double helical gear is of a smaller diameter than the second spur gear.

***Kish*** (i.e., Figs. 1-2 and 6; column 1, line 50 – column 13, line 62), on the other hand, teaches a split path transmission system comprising:

- A first double helical gear (i.e., Fig. 1, element 118L Fwd or 118R Fwd) driven by the first spur gear;

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- A second double helical gear (i.e., Fig. 1, element 118L Fwd or 118R Fwd) driven by the second spur gear; and
- Wherein the first double helical gear is of a smaller diameter than the first spur gear and the second double helical gear is of a smaller diameter than the second spur gear (i.e., Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify White such that the first and second drive gears are double helical gears and the diameter of the first and second double helical gears are smaller than the first and second spur gears, in view of Kish, in order to provide an effective equal torque splitting transmission.

### ***Conclusion***

8. This is a Request for Continued Examination (RCE) of applicant's Application No. 10/621,129. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after



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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID D. LE whose telephone number is (571)272-7092. The examiner can normally be reached on Mon-Fri (0900-1730).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on 571-272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David D. Le/  
Primary Examiner, Art Unit 3655  
03/17/2010

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